

Appl. No. 10/687,259
Response to 1st Office Action dated 06/19/2006
Reply to Office Action of 03/17/2006

REMARKS

In the above-identified Office Action, the Examiner rejected Claims 1, 2, 4, 5, 11, 12, 14, 15, 19, 20, 22 and 23 under 35 U.S.C. §102(b) as being anticipated by Minkoff et al. Claims 3, 6 – 9, 12, 15 – 18, 21 and 24 - 27 were indicated as allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims.

The Examiner is thanked for the interview of June 13, 2006. In that interview, Claim 1 and the applied reference were discussed. The Examiner agreed with Applicants' arguments that the applied reference does not anticipate the invention; however, the Examiner stated that a new search will have to be undertaken to determine the patentability of the claimed invention.

Claims 1 – 20 remain pending in the Application. For the reasons stated more fully below, Applicants submit that the pending claims are allowable over the applied reference. Hence, reconsideration, allowance and passage to issue are respectfully requested.

As stated in the SPECIFICATION, generally, most computer systems allocate memory space for a number of buffers configurable according to memory size and system performance constraints during system initialization. Under most operational conditions, the buffers are able to accommodate the data being placed therein. In some instances, however, the buffers may not be able to handle the size of the data. Particularly, when the size of the data exceeds the size of the buffer into which it is being placed, a buffer overflow may ensue. When that occurs, the excess data may overflow into an adjacent buffer. If data was stored in the adjacent buffer, the data may become corrupted.

Some systems allow sophisticated users to manually reconfigure buffers. Most users, however, are not sophisticated enough to be able to do so. In addition, even sophisticated users may not do so if they do not know or cannot anticipate the size of the data that is to be placed in the buffers. Thus, what is needed is a method of adaptively reconfiguring buffers.

AUS920030465US1

Appl. No. 10/687,259
Response to 1st Office Action dated 06/19/2006
Reply to Office Action of 03/17/2006

The present invention provides such a method. According to the teachings of the present invention, when data of a particular size is being stored in buffers, the number of times data of the particular size is stored is counted to determine whether the current size of the buffers is to be reconfigured. Specifically, if the particular size of the data is greater than the current size of the buffers and if the number of times data of the particular size is stored in one of the buffers is greater than a first threshold, the size of the buffers will be reconfigured.

The invention is set forth in claims of varying scopes of which Claim 1 is illustrative.

1. A method of adaptively reconfiguring a pool of buffers, the buffers having a current size, the method comprising the steps of:

receiving data of a particular size to be stored in one of the buffers;

counting each time data of the particular size is received to be stored in one of the buffers;

determining whether the particular size of the data is greater than the current size of the buffers; and

reconfiguring the current size of the buffers to the particular size of the data if the particular size of the data is greater than the current size of the buffers and if the number of times data of the particular size is stored in one of the buffers is greater than a first threshold. (Emphasis added.)

The Examiner rejected the independent claims under 35 U.S.C. §102(b) as being anticipated by Minkoff et al. Applicants respectfully disagree.

Minkoff et al. purport to teach a method of reallocating pools of fixed size buffers based on metrics collected for maximum number of concurrent requests for each distinct memory size. Accordingly, the memory of a computing device is subdivided into a first configuration of pools of fixed size memory buffers. In response to requests for memory specifying a particular memory size, a fixed size memory of at least the particular size is allocated from the memory area.

AUS920030485US1

Appl. No. 10/687,259
Response to 1st Office Action dated 06/19/2006
Reply to Office Action of 03/17/2006

Metrics are collected for each memory request, the metrics including distinct memory sizes based on the particular size requested and the peak number of concurrent requests for each distinct memory size. The memory area is reconfigured as needed into a second configuration of pools of fixed size memory buffers using the collected metrics.

However, Minkoff et al. do not teach the steps of (1) ***counting each time data of the particular size is received to be stored in one of the buffers***; and (2) ***reconfiguring the current size of the buffers to the particular size of the data if the particular size of the data is greater than the current size of the buffers and if the number of times data of the particular size is stored in one of the buffers is greater than a first threshold***.

The Examiner stated that the step of "counting each time data of a particular size is received to be stored in one of the buffers" is inherent in the teachings of Minkoff et al. since Minkoff et al. disclose that metrics of peak number of concurrent requests are collected. To calculate the disclosed metric, the Examiner continued, the number of times data of a particular size is stored in the buffers at any one time must be counted.

However, it should be noted that the present invention calls for counting each time data is to be stored while Minkoff et al. teach collecting only the peak number of concurrent requests. Counting each time data is stored implies taking a count over time whereas collecting peak numbers of concurrent requests implies taking instantaneous counts. Thus, the two statements are not equivalent.

The Examiner further asserted that Minkoff et al. teach the step of ***reconfiguring the current size of the buffers to the particular size of the data if the particular size of the data is greater than the current size of the buffers and if the number of times data of the particular size is stored in one of the buffers is greater than a first threshold*** in Fig. 5, element 550, the threshold being the exhaustion of buffer space to hold additional requests. Applicants respectfully disagree.

AUS920030465US1

Appl. No. 10/687,259
Response to 1st Office Action dated 06/19/2006
Reply to Office Action of 03/17/2006

In the paragraph that explains Fig. 5 (see col. 4, line 33 to col. 5, line 7), Minkoff et al. disclose that metrics are collected for each memory request. The metrics include distinct memory sizes associated with the request as well as the peak number of concurrent requests for each distinct memory size tracked. Metrics are also collected on which pools of fixed memory sized buffers have been exhausted during the period for which metrics are being collected. When it is determined that the current memory configuration is inadequate, the buffers are reconfigured.

In the paragraph that explains Fig. 6 (see col. 5, lines 23 – 41), Minkoff et al. explain what is meant by "the current memory configuration is inadequate." Particularly, Minkoff et al. disclose that if a particular buffer pool has an insufficient number of buffers to accommodate the peak number of concurrent requests for buffers in that pool, then the buffers in that pool will be reconfigured. Before reconfiguration occurs, however, another pool of buffers (i.e., a donor pool of buffers) has to be identified from which extra capacity to be reallocated to the buffers being reconfigured is to be taken. The donor pool of buffers is identified using the peak number of concurrent requests for the buffers in the donor pool and the actual allocated number of buffers in the donor pool. That is, a pool of buffers that has its peak number of concurrent requests being less than its allocated number of buffers may be used as the donor pool. In such a case, the excess capacity in the donor pool is reallocated to the buffers that are being reconfigured.

But, Minkoff et al. do not teach, show or so much as suggest the step of ***reconfiguring the current size of the buffers to the particular size of the data if the particular size of the data is greater than the current size of the buffers and if the number of times data of the particular size is stored in one of the buffers is greater than a first threshold.*** Rather Minkoff et al. only teach that the buffers are reconfigured when the peak number of concurrent requests for a buffer of a particular size exceeds the number of buffers in a pool

AUS920030465US1

Appl. No. 10/687,259
Response to 1st Office Action dated 06/19/2006
Reply to Office Action of 03/17/2006

of buffers of the requested size but not when the size of the data is greater than the size of the buffer.

Consequently, Applicants submit that Claim 1, along with its dependent claims, is allowable over the references. The other independent claims (i.e., Claims 10 and 19), which all include the emboldened/italicized limitations in the above-reproduced Claim 1, as well as their dependent claims are also allowable over the references. Therefore, Applicants once more respectfully request reconsideration, allowance and passage to issue of the claims in the application.

Respectfully Submitted

By: 

Volel Emile
Attorney for Applicants
Registration No. 39,969
(512) 306-7969

AUS920030465US1

Page 12 of 12